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LOCAL AND GLOBAL REGISTER PARTITIONING IN A VLIW PROCESSOR

Marc Tremblay and William Joy

ABSTRACT OF THE DISCLOSURE

5 A Very Long Instruction Word (VLIW) processor having a plurality of
functional units includes a multi-ported register file that is divided into a plurality of
separate register file segments, each of the register file segments being associated to
one of the plurality of functional units. The register file segments are partitioned into
local registers and global registers. The global registers are read and written by all
10 functional units. The local registers are read and written only by a functional unit
associated with a particular register file segment. The local registers and global
registers are addressed using register addresses in an address space that is separately
defined for a register file segment/ functional unit pair. The global registers are
addressed within a selected global register range using the same register addresses for
15 the plurality of register file segment/ functional unit pairs. The local registers in a
register file segment are addressed using register addresses in a local register range
outside the global register range that are assigned within a single register file segment/
functional unit pair. Register addresses in the local register range are the same for the
plurality of register file segment/ functional unit pairs and address registers locally
20 within a register file segment/ functional unit pair.

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